



Third West Weekly Report Shepherd, Michael

to:

Joyce Ackerman, 'Craig Barnitz (cbamitz@utah.gov)' 07/11/2012 03:54 PM

Hide Details

From: "Shepherd, Michael" < Michael. Shepherd@rockymountainpower.net>

To: Joyce Ackerman/R8/USEPA/US@EPA, "Craig Bamitz (cbamitz@utah.gov)" <cbarnitz@utah.gov>

5 Attachments











Weekly Reports 07-02 to 07-05-12.pdf Third West Weekly Log 2012-27.pdf 239341-1.pdf 239473-1.pdf 239552-1.pdf

Joyce & Craig,

Attached are the reports for the week of July 2, 2012.

All air monitoring results came back negative, except for a chrysotile hit on Tuesday last week.

Please let me know if you have any questions.

Thanks,

Mike Shepherd
Project Manager
Rocky Mountain Power - Major Projects
801.220.4584 Office
801.631.1310 Cell
801.220.2797 Fax
michael.shepherd@pacificorp.com



3rd West Substation Site Project Safety Audit

Project: 3rd West Sub Station	Date: 07/02/12
Location: 3rd West, 1st South, SLC	Job Number:
Survey Conducted By: Justin Kargis	Title:

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			х	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			х	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	x			
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			х	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.			x	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	x			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.652 (a)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			х	
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.			х	
1926.20 (b)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			х	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.			x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			х	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			x	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.	х			
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			x	
1926.403 (b)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	х			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a)	Scaffolding shall have guardrails and toe boards when more than 10 feet high and when less than 45 inches of work space.		٠	х	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			x	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	x			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			x	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			x	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			x	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	х			
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.	х			
1926.102 (a) (1)	Eye and face protection shall be provided.	х			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	x			
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			х	
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			Х	4

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	х			
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			х	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.			x	
1926.451 (a) (2)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.	x			
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			x	
1926.404 (f)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	х			
1926.556 (b) (2)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.	x			
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			x	
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.			х	
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	x			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (3)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.			x	,
1926.550 (b)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			х	

Comments:

CVE line crew excavated for ground grid in UTA yard. They had to remove the west section of chain link fencing to remove spoils from digging. This area appeared to be clean fill but was kept wet while excavations took place.

CVE electricians worked on control terminations around the capacitor banks. Weather was hot, dry and breezy in the afternoon with temperatures in the high 90's.



3rd West Substation Site Project Safety Audit

Project: 3rd West Sub Station	Date: <u>07/03/12</u>
Location:3rd West, 1st South, SLC	Job Number:
Survey Conducted By: Steve Smith	Title:

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.	883		x	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.		76	x	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	х			
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.			х	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.			x	
1926.100 (a)	Head protection, where there is a possible danger of head injury.	х			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title Title				Date
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.		li li	х	,
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.			х	
1926.20 (b)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			х	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.			x	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			х	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			x	
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.	х			
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			X.	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			х	
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	x			

.

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (4)	Scaffolding shall have guardrails and toe boards when more than 10 feet high and when less than 45 inches of work space.			х	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			X	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	х			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.			х	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			х	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			x	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	х			Ago
1926.150 (c)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.	x	le		
1926.102 (a) (1)	Eye and face protection shall be provided.	х			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	х			
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			х	
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			Х	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	x			
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			х	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.			х	
1926.451 (a) (2)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.	x			
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.		1	x	
1926.404 (f)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	x			
1926.556 (b) (2)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.	х			•
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.			х	9.
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.			x	
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	x			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.			x	,
1926.550 (b) (2)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.			х	,

Comments:

CVE line crew excavated for grounding grid in UTA yard. They had to remove the west section of chain link fencing to remove spoils from digging. This area appeared to be clean fill but was kept wet while excavations took place.

CVE electricians worked on control terminations around the capacitor banks. Weather was hot and dry with temperatures in the high 90's.



3rd West Substation Site Project Safety Audit

Project: 3rd West Sub Station	Date: 07/05/12
Location: 3rd West, 1st South, SLC	Job Number:
Survey Conducted By: Steve Smith	Title:

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.59	Hazard Communication Program, List of Chemicals, Training, MSDSs.			x	
1926.500 (b) & (d) (old standard)	Guardrails on open sided floors, floor holes and runways.			x	
1926.404 (b)	Ground fault circuit interrupters or an assured equipment grounding conductor program in use.	х			
1926.451 (b)	The employer shall instruct each employee in the recognition and avoidance of unsafe conditions.	60		х	
1926.451 (d)	Tubular welded scaffolds shall be properly braced so that they are plumb, square and rigid; legs on plumb, adjustable, mud sills, etc. to support the maximum load; guardrails and toe boards shall be installed.			х	,
1926.100 (a)	Head protection, where there is a possible danger of head injury.	х			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.652 (a) (1)	Excavation protective systems; examination by competent person when less than 5 feet in depth.			х	
1926.20 (b) (2)	Employer responsibility to initiate and maintain safety and health programs.			х	
1926.20 (b) (1)	Employer responsibility to provide for frequent and regular inspections by designated competent persons.			х	
1926.451 (e)	Manually propelled scaffolds shall have tight planking for the full width, platforms secured, ladder or stairway provided, suitable footing, stand plumbs, wheels locked, guardrails and toe boards.			х	
1926.1052 (c) (1)	Stair rail and handrail along each unprotected edge.			x	
1926.25 (a)	Debris, scrap lumber with protruding nails, not cleared for work areas, stairs and around structures.			x	***
1926.50	First aid shall be available in the absence of an infirmary, or other that is reasonably accessible; first aid supplies shall be accessible and telephone numbers posted.	х			
1926.451 (a) (13)	Scaffolding safe access not provided by ladder or equivalent.			x	
1926.651 (k) (1)	Excavations, protective systems, inspected daily by a competent person and as needed.			x	
1926.403 (b) (2)	Employer shall ensure electrical equipment is free from recognized hazards, is suitable, used in accordance with the listing, labeling or certification.	x			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (4)	Scaffolding shall have guardrails and toe boards when more than 10 feet high and when less than 45 inches of work space.			x	
1926.405 (g) (2)	Flexible cords shall be used without splice or tap; strain relief shall be provided.			x	
1926.405 (b)	Electrical boxes, fittings shall have covers, faceplates or canopy and holes shall be smooth where cords pass through; and unused openings in cabinets/boxes shall be closed.	x			
1926.701 (b)	Reinforcing steel onto which employees could fall shall be guarded.	8		x	
1926.1053 (b) (1)	Portable ladder side rails extend at least 3 feet or be secured at top.			x	
1926.651 (j) (2)	Excavations shall have materials or equipment placed at least 2 feet from the edge.			x	
1926.651 (c) (2)	Excavations shall have a safe means of egress such as ladders, ramps, etc.	x -			1
1926.150 (c) (1)	Portable fire fighting equipment shall be provided and extinguishers shall be inspected periodically.	x			
1926.102 (a) (1)	Eye and face protection shall be provided.	x			
1926.300 (b) (2)	Guards for power tools shall be used and moving parts of equipment shall be guarded.	x			
1926.350 (a)	Oxygen cylinders in storage shall be separated from fuel gas cylinders by at least 20 feet or a ½ fire resistance barrier.			x	
1926.405 (a) (2) (ii) (e) & (f)	Temporary lights shall be protected from breakage, not suspended by their cords and extension cord.			X	

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.405 (a) (2) (ii) (j)	Extension cords used with portable electric tools shall be of three wire type and designed for hard or extra hard usage.	x			
1926.105 (a)	Workplaces more than 25 feet above the ground or water shall have safety nets when ladder, safety line/belts, temporary floors, scaffolds, catch platform are not practical.			X	
1926.1051 (a)	Stairway or ladder shall be provided at all access points where there is a break in elevation of 19 inches or more.			х	
1926.451 (a) (2)	Scaffolding footing or anchorage shall be sound, rigid and capable of carrying the maximum intended load.	x			
1926.500 (c) (1) (old standard)	Wall opening shall be guarded.			х	
1926.404 (f) (7)	Electrical equipment connected by cord and plug shall be grounded except if there is an isolating transformer or the tool is double insulated.	х			
1926.556 (b) (2)	When working from an aerial lift, a full body harness and lanyard attached to the boom or basket.	x			
1926.501 (b) (1) (new standard)	Guardrails, safety nets or personal fall arrest system shall be used at 6 feet or more.		4	х	
1926.451 (a) (14)	Scaffold planking shall extend over their end support not less than 6 inches and not more than 12 inches.			х	
1926.602 (a) (9)	Bi-directional earth moving equipment shall have audible alarms.	x			

		In Compliance	Out of Compliance	N/A	Corrective Action Taken and
Standard	Title				Date
1926.451 (a) (3)	Scaffolding shall be erected, moved, dismantled or altered under the supervision of a competent person.			x	
1926.550 (b) (2)	Cranes, crawler, truck or locomotive, shall meet the design, testing, maintenance, and operation per ANSI B30.5_1968. The most recent certification shall be on file until a new one is prepared.	Ε		х	

Comments:

CVE line crew excavated for grounding grid in UTA yard. They had to remove the west section of chain link fencing to remove spoils from digging. This area appeared to be clean fill but was kept wet while excavations took place. Rain started in the morning and after working for a while in the rain everyone left at approximately 1:30 pm.





3RD WEST SUBSTATION REMEDIATION PROJECT

HEALTH SAFETY MANAGER (HSM)

DAILY CHECKLIST

		DIMET CHECKEIST
DATE:	07/02	<u>/12 </u>
General		
	area H	ealth and Safety Inspection
' NA		ew and if necessary update Activity Hazard Analyses (AHA) based on planned site
INA		ties for the day
NA		ties for the day y Planning or "Tailgate" mandatory meeting for all employees and contractors prior
NA	to cor	mmencement of any site work. Instruction, review hazards, health & safety issues ny modifications to the CSHASP
NA		azard and safety instruction for all first time employees, contractors or visitors
NA		plete Employee Meeting Record Form B (where applicable)
NA NA		ment required Respirator Training completion with Form H
NA		rd times and numbers of dump trucks and trailers as they leave the site with
1.72		minated material.
NA		rm retum of waste material manifest documents for each load with site
	mana	
NA Comr		CSHASP Forms (for applicable activities planned for that day)
NA NA	,1000 WII	Illness/Injury Report Form A
NA		Site-Specific Training Record Form C
NA		Hot Work Permit Form D
NA		Trench/Evacuation Permit Form E
NA		Combined Space Entry Permit From F
•		Exclusion zone operations are practiced as instructed.
	NA	Decontamination unit is working properly.
	NA	Workers are using decontamination unit as instructed.
	NA	Workers use personal protective equipment properly.
\square	Set ai	r samples at cardinal compass points around exclusion zone. Check
	throu	ghout the day to ensure proper operation.
	Obse	rve control measures for dust and fugitive materials i.e. watering excavation
	sites	and track out prevention.
$\overline{\square}$	Revie	ew sign-in/sign-out log throughout and at the end of the workday.
\square	Secur	e the site at the end of the workday
Sampling	σ	
Samping	2	
NIA 0 11	~ ~	

NA	Soil Confirmation sampling for any newly excavated areas
NA	Stationary Air Monitoring during contaminated soil removal around the perimeter of the exclusion zone
NA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil removal
NA	Digitally photograph each sample location and at any place field sampling personnel





	Electronically file photo files into the on-site database
	Complete Field Documentation
	Field Sample Data Sheets (FSDS)
	Logbook
	On-site computer database
	Label each sample media with a unique number
$\overline{\mathbf{V}}$	Seal sample(s) in zip lock plastic bags
☑	Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
☑	Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples
$ \overline{\Delta} $	Review and disseminate sample results as received from the laboratories to Project Manager and other appropriate managers and employees
	Electronically file sample reports into on-site database





3RD WEST SUBSTATION REMEDIATION PROJECT

HEALTH SAFETY MANAGER (HSM)

DAILY CHECKLIST

DATE:	07/03/12
<u>General</u>	
	area Health and Safety Inspection
NA	Review and if necessary update Activity Hazard Analyses (AHA) based on planned site
	activities for the day
NA	Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prio to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP
NA	Site hazard and safety instruction for all first time employees, contractors or visitors
NA	Complete Employee Meeting Record Form B (where applicable)
NA	Document required Respirator Training completion with Form H
NA	Record times and numbers of dump trucks and trailers as they leave the site with contaminated material.
NA	Confirm return of waste material manifest documents for each load with site manager.
NA	Complete all CSHASP Forms (for applicable activities planned for that day)
NA	Illness/Injury Report Form A
NA	Site-Specific Training Record Form C
NA	Hot Work Permit Form D
NA	Trench/Evacuation Permit Form E
NA	Combined Space Entry Permit From F
	Exclusion zone operations are practiced as instructed.
	NA Decontamination unit is working properly.
	NA Workers are using decontamination unit as instructed.
	NA Workers use personal protective equipment properly.
$\overline{\checkmark}$	Set air samples at cardinal compass points around exclusion zone. Check
	throughout the day to ensure proper operation.
	Observe control measures for dust and figitive materials i.e. watering excavation
	sites and track out prevention.
	Review sign-in/sign-out log throughout and at the end of the workday.
\square	Secure the site at the end of the workday
Sampling	3

NA Soil Confirmation sampling for any newly excavated areas

- NA Stationary Air Monitoring during contaminated soil removal around the perimeter of the exclusion zone
- NA Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil
- NA Digitally photograph each sample location and at any place field sampling personnel determined necessary





M	Electronically file photo files into the on-site database
☑	Complete Field Documentation
	Field Sample Data Sheets (FSDS)
	Logbook
	On-site computer database
	Label each sample media with a unique number
	Seal sample(s) in zip lock plastic bags
Ø	Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
☑	Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples
☑	Review and disseminate sample results as received from the laboratories to Project Manager and other appropriate managers and employees
☑	Electronically file sample reports into on-site database





3^{RD} West Substation Remediation Project **Health Safety Manager (HSM)**

	DAILY CHECKLIST
DATE:	07/05/12
General	·
	c area Health and Safety Inspection
NA	Review and if necessary update Activity Hazard Analyses (AHA) based on planned site
	activities for the day
NA	Safety Planning or "Tailgate" mandatory meeting for all employees and contractors prior to commencement of any site work. Instruction, review hazards, health & safety issues and any modifications to the CSHASP
NA	Site hazard and safety instruction for all first time employees, contractors or visitors
NA	Complete Employee Meeting Record Form B (where applicable)
NA	Document required Respirator Training completion with Form H
NA	Record times and numbers of dump trucks and trailers as they leave the site with contaminated material.
NA	Confirm return of waste material manifest documents for each load with site manager.
NA Com	plete all CSHASP Forms (for applicable activities planned for that day)
NA	Illness/Injury Report Form A
NA	Site-Specific Training Record Form C
NA	Hot Work Permit Form D
NA	Trench/Evacuation Permit Form E
NA	Combined Space Entry Permit From F
	Exclusion zone operations are practiced as instructed.
	NA Decontamination unit is working properly.
	NA Workers are using decontamination unit as instructed.
	NA Workers use personal protective equipment properly.
	Set air samples at cardinal compass points around exclusion zone. Check
	throughout the day to ensure proper operation.
	Observe control measures for dust and fugitive materials i.e. watering excavation
	sites and track out prevention.
\square	Review sign-in/sign-out log throughout and at the end of the workday. Secure the site at the end of the workday
Samplir	ng
NA Coll	Confirmation compling for any navdy avapaged areas
NA Soil	Confirmation sampling for any newly excavated areas Stationary Air Monitoring during contaminated soil removal around the perimeter of the exclusion zone
NA	Personal Breathing Zone Monitoring on personnel conducting contaminated dust and soil removal
NA	Digitally photograph each sample location and at any place field sampling personnel determined necessary

Electronically file photo files into the on-site database





	Complete Field Documentation
	Field Sample Data Sheets (FSDS)
$\overline{\mathbf{A}}$	Logbook
	On-site computer database
	Label each sample media with a unique number
•	Seal sample(s) in zip lock plastic bags
	Complete and include Chain of Custody (COC) Form required for shipping of samples to appropriate laboratory
	Package samples for transport IAW SOP 2-1, Packaging and Shipping of Environmental Samples
	Review and disseminate sample results as received from the laboratories to Project
	Manager and other appropriate managers and employees
	Electronically file sample reports into on-site database
	\square

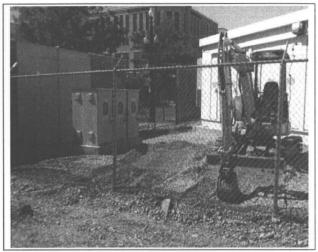
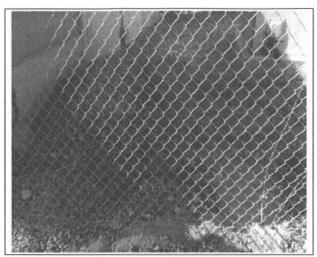


PHOTO 1



РНОТО 2



РНОТО 3



РНОТО 4

R & REnvironmental, Inc.

47 West 9000 South, Suite #2, Sandy, Utah 84070 (801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

DESIGNED BY: SCALE:		REVIEWED BY: DCR	
DRAWN BY: JMK	DATE 07/02/12	FILE:	

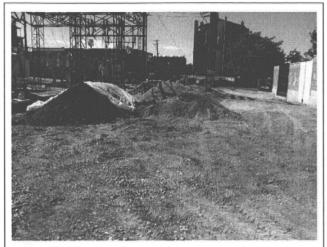
SITE PHOTOGRAPHS



3rd West Substation "2011 Upgrade Project" Salt Lake City, Utah



РНОТО 1



РНОТО 2



РНОТО 3



РНОТО 4

R&R Environmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah 84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

DESIGNED BY: SCALE:		REVIEWED BY: DCR	
DRAWN BY: SBS	DATE 07/03/12	FILE:	

SITE PHOTOGRAPHS



3rd West Substation "2011 Upgrade Project" Salt Lake City, Utah



РНОТО 1



РНОТО 2



РНОТО 3



РНОТО 4

R & REnvironmental, Inc.
47 West 9000 South, Suite #2, Sandy, Utah84070
(801) 352-2380 • Fax: (801) 352-2381

PROJECT NO:

DESIGNED BY:	SCALE:	REVIEWED BY:	
		DCR	
DRAWN BY: SBS	DATE 07/05/12	FILE:	

SITE PHOTOGRAPHS



3rd West Substation "2011 Upgrade Project" Salt Lake City, Utah

PACIFICORP OPERATIONS - Field Construction Representative Daily Log

PROJECT NAME:	Third West Sub	- Rebuild	DATE: Monday, July 2, 2012						
PO & Work Order NO. :	3000078050 / 1	0035803	MAIN CONTRACT	OR: Cache Valle	ey Electric				
Crew Start Time:	6:55	Crew Stop Time:	17:20	Tot Hrs mns:	10:25				
	6:52	FCR Stop Time:	17:29	Tot Hrs mns:					
	0.32	FOR Stop Time.	17.29	TOUTIS IIRIS.	10.37				
se military time format 00:00									
VEATHER CONDITIONS:		Sunny - 72 de	grees in AM, 95 deg	grees					
DESCRIPTION: (work performe	ed. general comme	ents, instructions to	contractor. # of crev	w members onsite	.)				
R&R set up four monitors. CVE Line natch the drawings. CVE Fab Crew providing support to the line crew. Newman = 0, R&R = 1.	e Crew (qualified persons is not on site today.	on), with two electricians	rotated the capacitor be terminating the control of	eank structures 180 decables in CB 46 and (egrees to CB 47, and				
		v	•						
		•							
	•			•					
		•							
·									
•									
	•								
			•						
F WORKING IN ENERGIZED SI	IDSTATION:								
Dispatcher login, name and time:	Bany Nielsen - 6:52)	<u> </u>						
Dispatcher logout, name and time:	Bob Gentry - 17:29		 						
DISCREPANCIES:	IDOD Gently - 17:20		IMMEDIATE CORRE	CTIVE ACTION TA	KFN:				
7,110,120.		I							
· · · · · · · · · · · · · · · · · · ·									
					•				
·									
									
				•					
		i.							
DELAYS OR LOST TIME ENCO	UNTERED:								
DELAYS OR LOST TIME ENCO	UNTERED:								
DELAYS OR LOST TIME ENCO	UNTERED:								
DELAYS OR LOST TIME ENCO	UNTERED:		,						
DELAYS OR LOST TIME ENCO	UNTERED:								
		.1	,						
DELAYS OR LOST TIME ENCO	ed, idle):		,						
EQUIPMENT (working, delivere	ed, idle): ift, 1 dumpster, office tra	iler, conex , exclusion zone	conex (2), tool trailer, Pic	ckup, JLG (1), tool traile	r Newman:				
EQUIPMENT (working, delivere	ed, idle): ift, 1 dumpster, office tra	iler, conex , exclusion zone	conex (2), tool trailer, Pic	ckup, JLG (1), tool traile	r Newman:				
EQUIPMENT (working, delivere	ed, idle): ift, 1 dumpster, office tra	iler, conex , exclusion zone	conex (2), tool trailer, Pic	ckup, JLG (1), tool traile	r Newman:				
EQUIPMENT (working, delivere	ed, idle): ift, 1 dumpster, office tra	iler, conex , exclusion zone	conex (2), tool trailer, Pio	ckup, JLG (1), tool traile	r Newman:				
EQUIPMENT (working, delivere EVE Line Crew: Portable toilet (2), forkl rachoe (1), bobcat, mini-ex, water truck,	e d, idle): ift, 1 dumpster, office tra compactor, backhoe.	iler, conex , exclusion zone							
EQUIPMENT (working, delivere	e d, idle): ift, 1 dumpster, office tra compactor, backhoe.	iler, conex , exclusion zone		ckup, JLG (1), tool traile	r Newman:				
EQUIPMENT (working, delivere EVE Line Crew: Portable toilet (2), forkl rachoe (1), bobcat, mini-ex, water truck,	e d, idle): ift, 1 dumpster, office tra compactor, backhoe.	iler, conex , exclusion zone							

Rocky Mountain Power

Russ Johnson

Field Construction Representative

A division of PacifiCorp

PACIFICORP OPERATIONS - Field Construction Representative Daily Log

PROJECT NAME:	DATE :	y 3, 2012			
PO & Work Order NO. :	3000078050 / 1	MAIN CONTRA	ACTOR : Cache	Valley Electric	
Crew Start Time:	:55	Crew Stop Time:	17:05	Tot Hrs n	nns: 10:10
FCR Start Time:	:52	FCR Stop Time:	17:15	Tot Hrs n	nns: 10:23
Use military time format 00:00					
WEATHER CONDITIONS:		Sunny - 75 de	egrees in AM, 99	degrees	
DESCRIPTION: (work performed R&R set up four monitors. CVE Line placed in a pile which will be removed conduits to the cap banks, repaired gracew = 3, CVE Fab Crew = 0, CVE	Crew (3)installed gro from the site to Clea ounding in the capac	ounding in the UTA yard n Harbors. CVE Fab C itor area, and pulled wi	, tying RMP yard to rew is not on site too es for lighting. N ew	UTA yard. Excavate lay. CVE Electricia	ed material was n Crew ran
IF WORKING IN ENERGIZED SU	BSTATION:			·	
Dispatcher login, name and time:	Barry Nielson - 6:52	2			
Dispatcher logout, name and time:	Bob Gentry - 17:15		· · · · · · · · · · · · · · · · · · ·		
DISCREPANCIES:	<u> </u>		IMMEDIATE COR	RECTIVE ACTIO	N TAKEN:
7/2 - Identified that there are no AC cables Contacted Matt Moore.	from the control buildi	ng to the two 46 kV CBs.	Matt directed CVE to p	oull two # 10 wires for	each breaker.
•	·				
,					
		•	,		
DELAYS OR LOST TIME ENCOU	INTERED:				
EQUIPMENT (working, delivered CVE Line Crew: Portable toilet (2), forklif trachoe (1), bobcat, mini-ex, water truck, or truck,	, 1 dumpster, office tra	iler, conex , exclusion zon	e conex (2), tool trailer,	Pickup, JLG (1), tool	trailer. Newman:
OSHA Recordable Safety Incide	nts:		R	eported by:	Time:
		 -	•		
					•
					-

Rocky Mountain Power

Russ Johnson

Field Construction Representative

A division of PacifiCorp

PACIFICORP OPERATIONS - Field Construction Representative Daily Log

PROJECT NAME:	Third West Sub - Rebuild			DATE :	rsday, July 5,	ly 5, 2011		
PO & Work Order NO. :		300007805	0 / 10035803		MAIN CONT	RACTOR :	Cache Valle	ey Electric
Crew Start Time:	6	:55	Crew Stop	Γime:	14:00)	Tot Hrs mns:	7:05
FCR Start Time:	6	3:50	FCR Stop	Γime:	17:10)	Tot Hrs mns:	10:20
Use military time format 00:0			. о. стор	•		<u></u>		10.20
WEATHER CONDITIONS:		· · · · · · · · · · · · · · · · · · ·	Sunny - 71	degre	ees in AM , 84 d	legrees in l	РМ	
DESCRIPTION: (work per								
CVE Line Crew (2)installed gro CVE Electrician Crew pulled ar Newman is not on site today. Crew = 0, CVE Electrical Crev	unding nd termi Wilding	in the UTA yard nated wires at 4 tested conduit	I, running E-W runs th 16 kV breakers for hea trench compaction, te	at tie ir ters an	nto the UTA grid. d spring motors.	CVE Fab C They replace	rew is not on si ced cable trench	te today. covers.
IF WORKING IN ENERGIZ	ED GII	DOTATION:				<u> </u>		
Dispatcher login, name and tim			C.EO					
Dispatcher logout, name and ti		Bany Nielson						
DISCREPANCIES:	me.	Bob Gentry - 1	7:10		IMMEDIATE CO	DDECTIV	E ACTION T	WEN.
DISCREPANCIES:					ININEDIATEC	JKKECIIV	E ACTION TA	ANEIN:
					 			
				1				
		· · · · · · · · · · · · · · · · · · ·	···	-				
DELAYS OR LOST TIME E	NCOU	INTERED:						
-								
			•					
FOURMENT (working do	livere	l idla):						
EQUIPMENT (working, de CVE Line Crew: Portable toilet (2 trachoe (1), bobcat, mini-ex, wate), forklift	, 1 dumpster, offi		on zone	conex (2), tool trail	ler, Pickup, J	LG (1), tool traile	r. Newman:
OSHA Recordable Safety	Incide	nts:				Reported	by:	Time:
		-						-
				<u> </u>				-
D 1 14 1		_					7'	

Rocky Mountain Power

Russ Johnson

Field Construction Representative

A division of PacifiCorp



July 5, 2012

Laboratory Code:

RES

Subcontract Number:

NA

Laboratory Report: Project # / P.O. #

RES 239341-1 None Given

Project Description:

None Given

Eldon Romney R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 239341-1 Is the job number assigned to this study. This report is considered highly confidential dnd the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described In this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 239341-1

Client:

R & R Environmental Client Project Number / P.O.:

None Given

Client Project Description: Date Samples Received:

None Given July 3, 2012

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

July 5, 2012

Client ID Number	Lab ID No	umber	Area Analyzed	Air Volume Sampled	Number of Asbestos Structures Detected	Analytical Sensitivity	Asbestos Concentration	Filter Loading
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)
3W-0701212 E	EM	890209	0.0900	961	ND	0.0045	BAS	BAS
3W-0701212 N	EM	890210	NA	970	NA	Rejected - Una	ble to Complete Prep D	ue to Debri s
3W-0701212 W	EM	890211	0.0800	<u> </u>	ND	0.0050	BAS	BAS
3W-0701212 S	EM	890212	0.0800	970	ND	0.0050	BAS	BAS

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected

Filter Diameter = 25 mm

BAS = Below Analytical Sensitivity Average Grid Opening in mm² = 0.010

Effective Filter Area = 385 sq mm

Due Date: 7.5.12

Due Time: 545

REICAE RESERVOITS ENVIRONMENTEN, INC. 8801 Logan St. Denvar, CO 80216 · Ph; 303 884-1986 · Fax 303-477-4276 · Toll Free :886 RESI-ENV

RES 239341

7937 4783 3883

Pager: 385-509-2098

	,		INVOICE TO:	(IF DI	FFE	RENT)								C	ONTAC	TIN	FOR	MATION	:			
Company: R	ER Entronmental		Conpany:	Conpany:			Co	nlact	Ou	RP	425	ie (L.				Contact:						
Address: 41	W 9000 S # 2		Address:	Address:			Ph	Phone: Prop of Chy								Phono:	:						
San	2 W. SE070							FE										Fax					
								Ce	1/page	<u> </u>	16	<u> 541</u>	(- (₩ 3 ×55:	5			Col/pa	ger:				
Project Number								F#															
Project Description	lon/Location								Cu	ve	e r	rev	Wr 1	Ф. <u>с</u>	224								
ASBESTO	S LABORATORY HOUR	S: Weekdays: 7am - 7pm		T		. :		REQU	EST	ED /	ANA	LYS	IS		-	T	VAL	ID M	ATRIX (ODES	LAE	NOTES:	
PLM / PCM	(TEN RUSH (Sa	me Day) K PRIORITY (Next	Day)STANDARD		T			T	T	П		T		П			Air =	Ā		Bulk = B			
		Rush PCM = 2hr, TEM = 6hr.)						lı.	1					1	1 1)usi =	D	_]	Paint = P			
CHEMISTE	RY LABORATORY HOUR	S: Weekdays: 8aiti - Spm			1				1						1 1		Soil =	S		Nipe = W			
Metal(s) / D	ust	_RUSH24 hr3-5 Day			귵		1		1	П	-		1.				vab =			F = Food			
	elals & Welding	RUSH 5 day10 day	"Prior notification is ragulard for RUSN	Ę	Otant		1	1 8	1	-	11	Quantification		1	8	Drinkin	g Wat			e Water = W	<u>N</u>		
Fume Scan	/ ICLP		turnarounds.**	Point Count	*	8	1	Metals Scan							Quantification	ļ			= Other				
Organics		24 hr 3 day5 Day			8	<u>a</u>	1	eta	l		11	Ž	5	8	S S	**A51	M E17	'92 ap	proved wit	oved wipe madia only**		<u> </u>	
		OURS: Weekdays: 9am -			2	. [광		2				ង្ខ	Quantification	5 5	9 2		1 1	. 1		1			_
	:H7, Coliforms, S.aureus	24 hr 2 Da] 8	.] §	하 한 독]],§]			1	aug.	ac ac	8 5	}		.]		}	 		_
1	Listeria, E.coli, APC, Y & N			وًّا ر	۱ <u>=</u>	μÖ	₹	3				بار 19 يو		8	2 8	ĺ	1 1			1.	.		_
Mold			48 Hr3 Day5 Da		Level II.	7400B,	8	§ § §	I			ঠু ব	8	5 0	ALS Bart								-
"Turnaround		rity, subject to laboratory voluma a afterhours, weehenda and trolidays.		feea S	. ₹	8 2	l ex	Analyte(s)	Ē	# 5 14 15				÷ 0	<u> </u>	Į₽	1 1						
Special Inst		monograf, woonende dat nondaya.		Short report,	₩	7400A	- Total, Respirable			Salmonella: +/-	3 .	Aerobic Plate Count	Coliforns:	is T	¥ s	₹ .	Code	ě		Ì			
Special liter	ructions.			8	₹	B 1.	17	2 8	N N	틝	a lag	Aerob	용	S S	흥필	1 g g	Ž	喜	Oate	Time		n be r (Labora Ise Only)	atory
Clienteau	mple ID numbor	(Sample ID's must be un	iaua\		吾	Semi-	DUST	METALS RCRA 8,	ORGANICS - METH	ισ Ju		ROB	1010	<u>ω∫≻</u>	Motd: 4	Sample Volume (L) / Area	Matrix	# Containers	Collecter mm/dd/yy	Collecte	d		ļ
		(Sample to simust be un	ique/	_	×	-	+-	-	⁺	П		T T	T		T 8 -	961	Ā	_	7/02/13			200	-
1130	070212F			-	+		┿	+	 		++	+	₩		} 		7	-+	110411	4	- 6		-
2 3w -	70212N			_ _	11	44	4		ļ.,		-	4	H	4		970	41.4					10	
3 3W-0	70212 W				Ш		L				Ш		Ш		<u> </u>	970	Ш					11	
4 3W-0	70212 S						L	<u> </u>	ŀ		\perp	Ĺ		Ĺ	<u> </u>	1970	4	\perp	<u> </u>			12	
5								1					11	-			1 }			İ	1	•	•
6							1		1		1	\top		\top		1		\exists			1		
5 6 7		<u> </u>				-	广	 		\vdash	††	+		_	<u> </u>	\top	$\dagger \exists$	_		<u> </u>			
					 -	+	-	 	1		╀┤	+-		+		 	+ 1	+		 			\neg
8		<u>· · · · · · · · · · · · · · · · · · · </u>			+-		┼╌	┼─	+		╁	+	╁┤	+	 		1-	\dashv			+		
9		\frown		_	├		┾.	↓ —			+-+		\downarrow	-	 	——	1-1						
10			_ ·	L_	<u> </u>		<u> </u>	<u> </u>			Ш		Ш			1							
	amples received:		ditional samples shall be listed			_		•								_							
NOTE: RE	I will analyze incoming samples base sindicated on this Chain of Custody.	d upon information received and will not ball-constitute an analytical aarvices agr	the responsible for errors or cmissions aamant with payment terms of NET 30	in calcula I days, fail	ellons : lura to	resulting comply (from with p	the inacc aymant to	uracy (of origi nay res	inel da sult in t	la By a 1.5%	signir mon	ng ciller Ithly int	iVcompany r grast surcha	eprasantativ nga,	a agrad	s that	submission	of the following	samples for req	uasted	
	MI	- 7							7	$\overline{}$													\neg
Relinquis		~ Franci	Fed Ex				te/Ti			211	<u></u>					_	mple			On Ice	Sealed /	inlatti	
Laborator Received By:	ry Use Only	<u> </u>	Date/Time:	-	3 ' \	2	_	Carrie			Ŧ		-	,, t	シ	Te	mp. (f	·°) _		Yes / No	Yes / No 🕻	Yes No)
Results:	Contact Pho	one Email Fax Date	e Time	Initials		Contac	<u>.t</u>			Phor	ne Œ	mail	Eax			Dale -	7 5	15	T	me ⋺	Sloitial	5 5	$\overline{2}$
j <i>1</i> ,	Contact Pho	nne Email Fay Date	Time	Initials		Contac	+			Phor	ye Fı	mail	Pay			Date			Т	me	Initial	· 1	

Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type

Structure Types

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

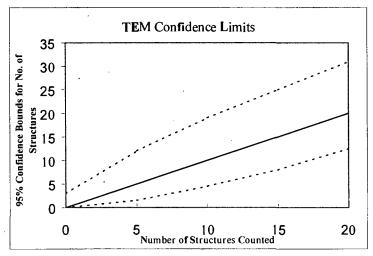
XGB = partly obscured by a grid bar

Sizing Conversion
1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Resarvoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX N(S)
Voltaae (KV)	100 KV
Magnification	(20K)X 10KX
Grid ooening area (mni2)	0.01
Scale: 1L=	0.28 um
Scale: 1D=	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Tyoe	

Client :	RIR
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	961
Date received by lab	7/3/12
Lab Job Number:	239341
Lab Sample Number:	890209

Analyzed by	AH
Analysis date	7/5/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	Ahera
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps Only):				
Fraction of primary fitter used				
Total Resuspension Volume (ml)				
Volume Applied to secondary filler (ml)				

Grid	Grid Opening	Stmcture	No. of Str	uctures	Dime	ensions Identification		Identification Mineral Class			1 = yes, blank = no			
Gild	Grid Operating	Туре	Primary	Total .	Length	Width	Identification	Amphibole	С	NAM	Sketch/Comments	Sketch	Pfroto	EDS
A	F4-6	M												
	E4-6	ND												
	4-6	ND		P	cA:	80°	winter	+ 5%	- De	bas				
	B4-6	MD		Pue	3.1	00 9.	intac	- 5%	de	65				
	A4-6	CM		•			<u>.</u>							
B	654	M												
	F5-4	7		•										
	(3/0-10)	ND				. (
	F6-6	CV)					-		
		-												

Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX N(S)
Voltage (KV)	100 KV
Magnification	(20K)X 10KX
Grid opening area (mm2)	0.01
Scale: 1L=	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary (Filter Area (mm2)	
QA Type	

R+R
A
970
7/3/12
239341
890210

F-Factor Calculation (Indirect Preps	Only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	·
······································	

	i i
Analyzed by	AH
Analysis date	7/5/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	۵
Counting nules (ISO, AHERA, ASTM)	Ahera
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of Str	uctures	Dime	nsions	Identification Mineral Class		Mineral Class			1 = yes, blank = no		
Gild	Grid Opering	Туре	Primary	Total .	Length	Width	identification	Amphibole C NAM		NAM	Sketch/Comments	Sketch	Photo	EDS
		-												
·														
			Re.7	cted	- 59	mple	would	l nut	we st	n Pr.	eserly 4	sece f	v.C	
					ble	+0	comple	nut te prep	Prud	ess				
									•		·			
				,										

Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX N(S)
Voltage (KV)	100 KV
Magnification	(20K)X 10KX
Grid opening area (mm2)	0.01
Scale: 1L=	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

RHR
A
970
7/3/12
239341
890211

F-Factor Calculatkm (Indirect Preps Only):				
Fraction of primary filter used				
Total Resuspension Volume (m/)				
Volume Applied to secondary later (ml)				

Analyzed by	AH
Analysis date	7/5/12
Method (D=Direct, !=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	Ahera
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of Structures		Dimensions		Identiftcation	Mineral Class				1 = yes, blank = no		
		Туре	Primary	Total .	Length	Width		Amphiloole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	H3-6	ND				_								
	63.6	2								,				
	F36	2		Pre	A:	70%	intac	t 5	-de	62				
	E36	2		Pres	Br	PCRO	4							
B	F2-6	2		7,5		•								
	E2-6	7												
	c26	ND												
	B26	20												
					7									
				·				•						

Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX N(S)
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	·
QA Туре	

R+R
A
970
7/3/12
239341
890212

F-Factor Calculation (Indirect Preps	Only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Analyzed by	AH
Analysis date	7/5/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	0
Counting rules (ISO, AHERA, ASTM)	Ahera
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of Structures		Dimensions		Identification	Mineral Class				1 = yes, blank = no		
		Туре	Primary	Total .	Length	Width	l l	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	E4-1	MD										·		
	C4-1	M>												
	B4-1	M		Pre	A:	80	9. jon to	act 5	9-d	ebr	S			
	A4-1	DN'		Pre	<u>လွဲ</u> - င	~Prec								
B	E4-6	ND												
	04-6	MD									·			
	B46	$\triangle $		·	0					_				
	A4-6	\sim			X									
				•	•									

Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, mm² = # GO counted x Average GO Area (mm)

Concentration, s/cc = $\frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{1L}{1000cc}$

Filter loading, s/mm² = # Asbestos structures Area Analyzed (mm²)

GO = TEM grid opening



July 6, 2012

Laboratory Code:

RES

Subcontract Number:

NA

Laboratory Report: Project # / P.O. # Project Description: RES 239473-1 None Given None Given

David Roskelley R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. Is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 239473-1 is the job number assigned to this study. This report is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101896-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 239473-1

Client:

R & R Environmental

Client Project Number / P.O.: Client Project Description:

None Given

Date Samples Received:

None Given July 5, 2012

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

July 5, 2012

Client	Lab		Area	Air	Number of	Analytical	Asbestos	Filter
ID Number	ID N	ID Number		Volume Sampled	Asbestos Structures Detected	Sensitivity	Concentration	Loading
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)
3W-7-3-01	ЕМ	890570	0.0400	3248	ND	0.0030	BAS	BAS
3W-7-3-02	EM	890571	0.0400	3250	ND	0.0030	BAS	BAS
3W-7-3-03	EM	890572	0.0400	3256	1	0.0030	0.0030	25.0
3W-7-3-04	EM	890573	0.0400	3258	ND	0.0030	BAS	BAS

NA = Not Analyzed

ND = None Detected

BAS = Below Analytical Sensitivity

Average Grid Opening in mm² = 0.010

Filter Material = Mixed Cellulose Ester

Filter Diameter = 25 mm

Effective Filter Area = 385 sq mm

DATA QA

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101890-0; TDH: #30-0015

TABLE II. SUMMARY OF ANALYTICAL DATA

RES Job Number:

RES 239473-1

Client:

R & R Environmental

Client Project Number / P.O.:

None Given

Client Project Description: Date Samples Received:

None Given

Analysis Type:

July 5, 2012

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

July 5, 2012

Client ID Number	Lab ID No	umber	Asbestos Mineral	A = 1		ucture Tyr	*	Structures >5 Microns in Length	**Excluded Structures	Asbestos Structures for
			-	Fibers		Clusters		iii Lengtii		Concentration
3W-7-3-01	EM	890570	ND	0	. 0	0	0	0		0
3W-7-3-02	EM	890571	ND	0	0	0	0	0	0	0
3W-7-3-03	EM	890572	Chrysotile	1	0	0	0	0	0	1
3W-7-3-04	EM	890573	ND	0	0	0	0	0	0	0

^{*}See Analytical Procedure for definitions

^{**}C = Excluded from total due to lack of confirmation

^{**}L = Excluded from total for length less than 0.5 micron (AHERA only)

^{**}A = Excluded from total due to i ncorrect aspect ratio

ND ≈ None Detected

Due Date: 3-4-12 Due Time: 1115---

S801 Logan St. Oenvar, CO 80216 • Ph; 303 984-1986 • Fax 303 477-4275 • Toli Free :866 RES| ENV

Pager : 303-509-2098

				INVOIC	ETO: (IF	DIFFE	RENT)									CONTA	CT II	NFO	RMA	TION:				
Company: R	+ R Envir	muental	Nc.	Compony:					Co	tact:	7005	٠	R	مادعه	oil	سعه			Cor	tact:					
Address: 4	7 13657	9000 Soul	J~	Address:					Ph	onė:						\rightarrow			Pho	ne:					
800	سکم ۲۷	84070							Fa	Fax:						Fax:									
								Ce	/pager									Cei	/pager:						
Project Number Project Oescrip	r and/or P.O. e: atton/Location;									al Dota						۰. ده۰	w_							•	
															_								===	5.46	
		RY HOURS: Weekd						-	REQU	ESTI	ED A	NAL	YSI	S			—			MAI	RIX CC		L/	AB NOT	ES:
PLM / PCN	1/ (EM		PRIORITY (Next Day)SIANDARD								1					<u> </u>	Air				ulk = B	 		
CHEMICT	DVIADODATO		1 = 2hr, TEM = 6hr.)					1	11			11							= D			aint = P			
		RY HOURS: Week	24 hr3-5 Day				- 1	ĺ	11	1 1	1						-		= S = SV	, 		pe = W = Food	 		
Metal(s) / [Just Netals & Welding			**Prior nolificat	ion is	unt Quant,				1 1		8											 		
Fume Scar		RUSH	5 da y 10 day	required (ar R		Point Count	"	1	Į	\ \	11	1				ē s	Linki	Linking water			O = Other				
Organics		24 hr.	_ 3 day5 Da y	tumarounds		5 4	8	1	Metals Scan	1		Quantification	50			5 6	**A!	TM E				media only"*	 		
	OLOGY LABOR		leekdays: 9am - 6pt	<u> </u>			\$	1	₹ S			ð		or Quantification	ے ا	tion, Quantification	-	Τ	T	T			·		
	7:H7, Collforms,			3-5 Day		Long report, el 11, 7402, 1	ੂਵੇਂ ≤		- Analyte(s) TCLP, Welding Fume,			5	Quantification	Sirie Sirie	Quantification	- E	-								
	a, Listeria, E.coli,		48 Hr3-5 Day			5 5	SP-FR	a				≄	널	Quantiti	pgi	entification			ŀ						
Mold		_	RUSH24 Hr		5 Day			藍	@ <u>\$</u>		*	質	į	है ह	ğ		-								
**Turnaroun	d times establish a la	aboratory priority, Subject	to laboratory volume and a	re not guaranteed. Ac	dilional toes	report, Lc	\$ 5	Respirable	₹\$	E	∻	၂ မိ	ō	÷ +	ð	휘	يو ا								
·			reekends and holidays.**	·		\$ \$	₹ ₹	Total,	\$ 3	\$	E 12	幸薑	÷		<u> </u>	. Z	 =	وا	ع ار				Γ.		
Special Ins	tructions:					Short	ant, Micro-vac, 7400A, 7400B,	Ē	, P	ORGANICS - METH	Salmonella: +/- E.coli O157:H7:	Jisterla: +/-	8	Coliforms:	ż	# # #	Sample Volume	3	# Containers	_		_	EM Nu	mber (Laboratory
					į		₹ •	Ë	14 % 2 %	×		A GE	8		∞	Mok PP	Sample Vo	Matrix	i i	Col	Date llected	Time Collected		Use Only)
Client sa	mple ID numb	er (Sam	ple ID's must be unique)		<u> </u>	Semi-	DUST	METALS RCRA 8.	8		MICR	OBIC	LOO	Y	- 8 8	8 (2	O	m	necteu n/dd/yy	nh/inm a/p			· .
1 3 43	-7-3-01				Ī	7								Т	П		324	80		7.	3-12		800	105	30
						×					\sqcap				\top		325			7. 2	3-12				→ (
	-7.3-03					×		†			77	\top	T		\Box	1	325			T	3-12				72
	-7-3-04							1	 				П	1	$\dagger \dagger$		325		- 1		3-12				⊐ 3
	-1-3-05	-		·		T	+	1	<u> </u>		+	+		\top	H	+	1		+	 	2			i	
.6				······					<u> </u>		77		+	\top	H		1	+	1	 				:	
7				· · · · · · · · · · · · · · · · · · ·		_				-	11		\Box	+	H	+		+	+	-		·			
8						+	_	 	-	-	++	+		+	H	+	· .	+	+	 					
9									-	\dashv	††	+	\Box	\dashv	+	+	+	+	╁┈	-		·			
10	.						+-			-	††	+	H	+	Н	+		+	+	 			 		
	samples received:	/ 4)	(Addition	nal samples shall b	ne listed on a	ttaclied	long fr	om)		L	LI		11		1_1				ــــــــــــــــــــــــــــــــــــــ	J			L	·····	
	•	samples based upgerinforms	ation received and will not be re							racy of	origins	al data.	By sk	gning	client/	company	represental	ive ag	rees th	at subn	nission of	the following sa	mples for ri	equested	
analysis a	s indicated on this Cha	n of Custody shall constitute	an analytical services agreeme	nt with payment terms	of NET 30 days,	fallure to	comply v	with pa	ayment to	ms me	y resul	it in a 1	.5% n	nonthi	y Inter	est surch	inge.								
Palina!	shed By: 太		/	FedEx			Del	o/Ti-	ma: 🛶	2	. 10	,					را		۰.	ndition		n Ice S	Sealed	Into	,
	ry Use Only	1		-eocx					me: 7	.) .								•		naition			ealed es / No	Inte	· / I
Received B		Elmil	Date:	e/Time:	7 . *	5 C	Z	vi	Carrie	:	=		لم	رست	×			,p.	v /			.57110 V	,,,,,,,,	<u> </u>	/ J
Results:	Contact	Phone Email	Fax Date	Time	Initial	s	Contac	t		F	tione	Ém	aiLF	ax			Date -	7c	۱۷		Tim	8011 a	Inili	als	
	Contact	Phone Email	Fax Date	Time	<u>Initial</u>	s	Contac	t		F	hone	Ema	all F	ax			Date				Time		Initi	als	
																	-	18	-	77	545	١(٩) (_		

Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type A = Amosite An = Anthophyllite C = Chrysotile Cr = Crocidolite Cr = Tremolite Structure Types F = Fiber B = Bundle C = Cluster M = Matrix

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

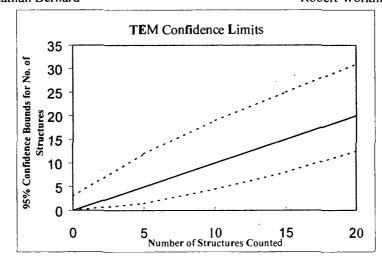
XGB = partly obscured by a grid bar

Sizing Conversion
1 length unit = 5 mm on screen = 0.278 micron
1.80 length units = 0.5 micron
18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Reservoirs Environmental, Inc. TEM Astrestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX N &
Voltaae (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mɪn2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mrn2)	
QA Tyce	

Client :	R+R
Sample Type (A=Alr, D=Dus0:	A
Air volume (L) or dust area (cm2)	3248
Date received by lab	7/5/12
Lab Job Number	239473
Lab Sample Number:	890570

F-Factor Calculation (Indirect Preps	Only):
Fraction of primary filter used	
Total Resuspension Volums (ml)	
Volume Applied to secondary titler (ml)	

Analyzed by	TK
Analysis date	7/5/12
Method (D=Direct, I=Indlrect, 1A=Indlrect, ashed)	D
Counting mles (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of Str	uctures	Dime	nsions	Identification	Mineral Class	Mineral Class			1 = y	es, blank	= no
Ond	Ond Opcining	Туре	Primary	Total	Length	Width	identification	Amphibole		NAM	Sketch/Comments	Sketch	Photo	EDS
A	€3-3	W												
	(3-3	NO		/	my	A	FeB n	tact 5	107	رار	his			
В	B3-6	M		l ()					
	A3-6	3			/-	nep	13 90%	wace 5.	-100	del	15			
					(,			

Reservotrs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	RÉI
Instrument	JEOL 100 CX N &
Voltage (KV)	100 KV
Magnification	/20KX 10KX
Grid opening area (rnm2)	0.01
Scale: 1L = .	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Ffiter Area (mm2)	
QA Tyoe	·

uic Oddiit
R+R
A
3250
7/5/12
239473
890571

Analyzed by	7.K
Analysis dale	7/5/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Oate Analyzed

F-Factor Calculation (Indirect Preos Only): Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volums Applied to secondary filter (nd)	

Grid	Grid Opening	Structure	No, of St	mctures	Dime	nsions	Identification	Mineral Class	,	:		1 = yes, blank = no		
		Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Pholo	EDS
A	64-1	M			In	y A	90%	what:	5%	delo	~	L		
	B4-1	M												
В	C3-4	M			P	er	BFB	mace 5	8	lehr	.			
	834	NO												
								·			, ,			
	·													
						·								
·														
		··						-						
				·		·								

Reservoirs Environmental, Inc. 7EM Asbestos Structure Count

,	
Laboratory name:	REI
Instmment	JEOL 100 CX N
Voltage (KV)	100 KV
Magnification	20KX) 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client:	R+R
Sample Type (A=Air, D=Dust):	A
Air yolume (L) or dust area (cm2)	3256
Date received by lab	7/5/12
Lab Job Number:	239473
Lab Sample Number:	890572

F-Factor Calculation (Indirect Preps	Only):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filtsr (ml)	

Analyzed by	TR
Analysis date	7/5/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	D
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Daje Analyzed

Grid	Grid Opening	Stmcture	No. of Str	nctures	Dime	nsions	Identification	Identification Mineral Class				1 = y	es, blank	= no
3	S Spaning	Туре	Primary	Total	Length	Width	, a sinanoda on	Amphibole	С	NAM	Sketchi/Comments	Sketch	Photo	EDS
A	031	ND				Pmp	A 8	Ohn haf		50/	Lons			
	133-1	M				Pur	B~	50% in he	6	50/2	lebrs			
B	644	M									ð			
	F4-4	F			6	1	CD		~					
		•							/		, ,			
								//	B	7/5	12			
									7	17				
								7						
						·								
		·												

Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	REI
Instmment	JEOL 100 CX N &
Voltage (KV)	100 KV
Magnification	20KX 10KX .
Grid opening area (mm2)	0.01
Scale: 1L=	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	·
QA Type	•

R+R
A
3258
7/5/12
239473
890573

Analyzed by	7B
Analysis date	7/5/12
Method (D=Oirect, t=Indirect, tA=Indirect, ashed)	D
Counting miles (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps O	nly):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary tilter (ml)	

Grid	Grid Opening	Stracture	No. of Str	uctures	Dime	nsions	Identification	Mineral Class				1 = yes, blank = no		
Gild	Grid Operating	Type	Primary	Total	Length	Width	ideriulication	Amphibole	С	NAM_	Sketch/Comments	Sketch	Photo	EDS
A	F4-4	M				Pus	A	80%	Lut		5% de 6	ns		
	E4-4	ND				Pmo	B	90 %	hus	c 1	5 % deb	iς		
B	H44	ND												
	64-4	M					,	1	B	7/0	1/2			
								. / /		77-7				
				·				. /						
								•						

Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th_g structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, $mm^2 = \# GO \text{ counted } x \text{ Average } GO \text{ Area } (mm)$

Concentration, s/cc = $\frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}} \times \frac{1}{\text{Volume (L)}} \times \frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)} \times \frac{1L}{1000cc}$

Filter loading, s/mm² = # Asbestos structures Area Analyzed (mm²)

GO = TEM grid opening



July 9, 2012

Laboratory Code:

RES

Subcontract Number:

NA

Laboratory Report: Project # / P.O. #

RES 239552-1 None Given

Project Description:

3rd West Substation

David Roskelley R & R Environmental 47 West 9000 South #2 Sandy UT 84070

Dear Customer,

Reservoirs Environmental, Inc. is an analytical laboratory accredited for the analysis of Industrial Hygiene and Environmental matrices by the National Voluntary Laboratory Accreditation Program (NVLAP), Lab Code 101896-0 for Transmission Electron Microscopy (TEM) and Polarized Light Microscopy (PLM) analysis and the American Industrial Hygiene Association (AIHA), Lab ID 101533 - Accreditation Certificate #480 for Phase Contrast Microscopy (PCM) analysis. This laboratory is currently proficient in both Proficiency Testing and PAT programs respectively.

Reservoirs Environmental, Inc. has analyzed the following samples for asbestos content as per your request. The analysis has been completed in general accordance with the appropriate methodology as stated in the attached analysis table. The results have been submitted to your office.

RES 239552-1 is the job number assigned to this study. This report Is considered highly confidential and the sole property of the customer. Reservoirs Environmental, Inc. will not discuss any part of this study with personnel other than those of the client. The results described in this report only apply to the samples analyzed. This report must not be used to claim endorsement of products or analytical results by NVLAP or any agency of the U.S. Government. This report shall not be reproduced except in full, without written approval from Reservoirs Environmental, Inc. Samples will be disposed of after sixty days unless longer storage is requested. If you have any questions about this report, please feel free to call 303-964-1986.

Sincerely,

Jeanne Spencer

President

RESERVOIRS ENVIRONMENTAL, INC.

NVLAP Lab Code 101898-0; TDH: #30-0015

TABLE I. TEM AIR FILTER SAMPLE DATA AND ANALYTICAL RESULTS

RES Job Number:

RES 239552-1

Ciient:

Client Project Number / P.O.:

None Given

Client Project Description:

R & R Environmental 3rd West Substation

Date Samples Received:

July 6, 2012

Analysis Type:

TEM, AHERA

Turnaround:

24 Hour

Date Samples Analyzed:

July 6, 2012

Client ID Number	Lab ID Number		Area Analyzed			Analytical Sensitivity	Asbestos Concentration	Filter Loading	
			(mm²)	(L)		(s/cc)	(s/cc)	(s/mm²)	
3W-7-5-01	EM	890754	0.0800	986.4	ND	0.0049	BAS.	BAS	
3W-7-5-02 EM 890755		890755	NA	990	NA	Rejected I	oading		
3W-7-5-03	EM	890756	0.0800	991.8	ND	0.0049	BAS	BAS	
3W-7-5-04 .	EM	890757	0.0800	995.4	ND	0.0048	BAS	BAS	

NA = Not Analyzed

Filter Material = Mixed Cellulose Ester

ND = None Detected

Filter Diameter = 25 mm

BAS = Below Analytical Sensitivity Average Grid Opening in mm² = 0.010 Effective Filter Area = 385 sq mm

P- 303-96 4-198 6 F: 303-477-427 5

5801 Logen Street, Suits 100 Denver, CD 80216

1-866-RE SI-ENV

7486 8555 7130

Due Date: 3-912

Contact

Phone Email Fax

Due Time: S 15	RESELVOII 6801 Logan St Dassysr, Poger : 303-50	CO 80	218 • P	h: 303	684-1	188 6 • Fa	ax 303	3-477 -	4 276	· Tot	Free	.866 I	RESI	ENV	in c					l-aye _		•
	INVOICE TO: (II	F DIF	FER	ENT)	}										ATMO	CT I	NFO	RMAT	ION:			
Company: R+R Ensuronmental Inc	Company:					Co	Contact Dave Roskalley						Contact:									
Address: 47 West 9000 South #2	Addenss:					Ph	Phone:					Pnona:										
Sandy UT 824070						Fa	x									Fax:						
						Ce	0/page	XF:							•		Cat	Vpesor:				
Project Number and/or P.O. #:						Fil	nal Dai	ta Dsli	vsrabl	e Ema	ii Add	(858:										
Project Description Location: 3 webst Substation							المحدد	<u>८@</u>	ş (.	<u> 28</u>	E1	440	Kò	<u>ء ره</u>	<u> </u>							
ASBESTOS LABORATORY HOURS: Weekdays: 7aiii - 7pm		T			!	REQU	EST	ED.	AN/	ALY:	SIS				1	VA	LID	MATR	IX CC	DES	Ū	AB NOTES:
PLM / PCM TEM RUSH (Same Day) X_ PRIORITY (Next	Day)STANDARD	Τ	Ī	7				П	T	\prod	\top	П				Air				ulk = B		
(Rush PCM = 2hr, TEM = 6hr.)		-}				11	1	11		1 1			1	1	\vdash	Oust				aint = P		
CHEMISTRY LABORATORY HOURS: Weekdays: 8am - Spm Metal(s) / Dust RUSH 24 hr. 3-5 Day	<u> </u>	- -					1				4			1	-		= S			pe = W	 	
	**Prior notincation is	1	Quant,							5				1	_		= SV	-		= Food		
RCRA 8 / Metals & Welding RUSH 5 day 10 day	required far RUSH	Į	ð	,		Scan		1 1		蒙	1		ģ	ø	Drink	ing w				Water = WW		
Organics 24 hr 3 day 5 Day	tumarounds.**	Point Count	ISO, +/-,			Metals S			١,	Quantif	ş	اءا	antife:	OR OTHER NOTES	**A	O = Other > STM E1792 approved wlpa media only**				<u> </u>		
MICROBIOLOGY LABORATORY HOURS: Weekdays: 9aiti - S			8 5					Ì	-	8	£. ≥	옱	8 0	8								
E.coll O157:H7, Colifonns, S.aureus24 hr2 Da	y3-5 Day	Lang report,	7402, SO-lock	OSHA	1,	8	1	Н		°		差	<u>چ</u> ا	Ě	1		1	1				
Salmonella, Listeria, E.coll, APC, Y & M 48 Hr3-5 I	Day	[§	`∴≌		ם	Q.				7	돌청	Quantif	F 8	ĕ								
MoldRUSH24 Hr	48 Hr3 DayS Day		Level II,	7400B,	Respirable	(S) PE	_	7	÷	틝	ទី ៦		취	3	1						,	
Turneround times establish a laboratory priority, subject to laboratory volume an apply for anarmours, weekends and holidays.*		. gg		74		- Analyte(s) TCLP, Welding Fume,	MET	4	¥ 4	ate	₽₽	÷	δ Ž	MITTA	星		_			_		
Special Instructions:		# - Short repart,	5	740	DUST - Total,	METALS - A RCRA 8, TCL	ORGANICS - METH	Salmone	Listeria:	Aerobic P	Cofforms:	S.aureus.	Motd: +/	HPLER'S	Sample Votume	Matrix Code	# Containers	Da Colle		Time Collected	EM Nu	ı mb er (Labora Lise Only)
Client sample ID number (Sample ID's must be unit	que)	7	Sem	2 ₹	3	₹ 8	S.		MIC	CROE	3IOL	OGY	,	S.			#	mrn/c		hh/mm a/p	ļ .	<u> </u>
1 36-7-5-01			X							Ш	4.	1	4		912		↓_	7.5	-(2	730 A	80	0754
2 30 -7-5-02			X	1		;					1		4	10	94.	FA	1	7-5	12			5
3 365-7-5-03			X			ļ	Ш	Ц				4	4	8	AH.	4 A	_	7-5	-12			56
4 300-7-5-04			X			1::	L		\perp		1	<u>+</u>	ر از	<u> </u>	914.	H A		7-5	12		Ŀ	57
5].		ےاد		غيله	سام	1	\		-		
6												Y		Ŀ				V	_			
7											\perp											
8																\perp				. :		
9									Ш		L	Ш										
10																						
Number of samples received: (Add NOTE: REI will analyze incoming samples based upon is formation received and will not analysis as indicated on this Chain of Custody shall our situe an analytical services agree		alculat	tions res	autiing fr	rom th	ha inaccu										ive agr	ees th	at submis	sion of t	he following sa	imples for re	equested
Relinquished By:	FWEX			Date		ne: 7			,	l	64	6			_			dilion:	-		Sealed	Intact
	Date/Time: 7	٠ - د	<u>- </u>	12		Carrier			F	` <u>_</u>	<u>-e</u>	ſΈ	بد		<u></u>				_		es / No	Yes / Ro
Results: Contact Phone Email Fax Date	Time Initi	ials	l Co	ontact	ł			Phor	HQ E	mail	y€ax	:			Oate `	7	97	2	Time	245	InIII	ais 🗲

Conlact

Phone Email Fax

Initials

Time

Attachment I

Key to Count Sheets Count Sheets Analytical Procedures

Structures identifications consist of an Asbestos Type followed by a Structure Type

Asbestos Type A = Amosite An = Anthophyllite C = Chrysotile Cr = Crocidolite Cr = Types Structure Types F = Fiber B = Bundle C = Cluster M = Matrix T = Tremolite

ND = no structures detected

M = other structure associated with a matrix

NAM = Non Asbestos Mineral

XGB = partly obscured by a grid bar

Sizing Conversion

1 length unit = 5 mm on screen = 0.278 micron

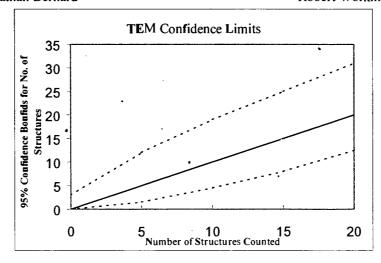
1.80 length units = 0.5 micron

18.0 length units = 5 microns

1 width unit = 1 mm on screen = 0.0556 micron

TEM Analysts

Jeanne S. Orr Nathan DelHierro Angela Heitger Jonathan Bernard Paul D. LoScalzo Mark Steiner Norberto Zimbleman Robert Workman



Upper and lower 95% confidence bounds for the number of structures counted assuming a Poisson distribution.

Reservoirs Environmental, Inc. TEM Astrestos Structure Count

Laboralory name:	REI
Instmment	JEOL 100 CX N (S)
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.01
Scale: 1L=	0.28 um
Scale: 1D =	0.056 um
Primary lilter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client:	RaR
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	986.4
Oate received by lab	7/6/12
Lab Job Number:	239552
Lab Sample Number:	890754

Analyzed by	TB
Analysis date	7/6/12
Method (D=Direct, I=Indlrect, IA=Indirect, ashed)	1
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

F-Factor Calculation (Indirect Preps	Only):
Fraction of primary filter used	İ
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (ml)	

Grid	Grid Opening	Structure	No. of Str	uctures	Dime	nsions	Identification	Mineral Class				1 = y	es, blank	= no
Ond	Ond Opening	Туре	Primary	Total	Length	Width	identification	Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	H5-1	ND												
	(45-1	M						· .						
	F5-1	M			Pup	SA	4B	~70%	inh	nt	5% al	v5		- ,
	E5-1	M			(c.fo					-
B	64-6	NO							5 7	16/12				
	Fef-6	ND						//	/	/				-
<u>.</u>	E4-6	ND												
	C4-6	ND		· ·				•						
						,								

Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX N (S)
Voltage (KV)	100 KV
Magnification	2010 10KX
Grid opening area (mm2)	0.01
Scale: 1L=	0.28 um
Scale: 1D =	0.056 um
Primary filler area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	RAR
Sample Type (A=Air, D=Dust):	A
Air volume (L) or dust area (cm2)	990
Oate received by lab	7/6/12
Lab Job Number:	239552
Lab Sample Number:	890755
. •	

F-Factor Calculation (Indirect Preps Only):							
Fraction of primary filler used							
Total Resuspension Volume (ml)							
Volume Applied to secondary filter (ml)							

Analyzed by	TB
Analysis date	7/6/12
Method (D=Direct, I=IndIrect, 1A=IndIrect, ashed)	1-15
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Opening	Structure	No. of Str	uctures	Dimer	nsions	Identification	Mineral Class				1 = y	es, blank	= no
	Ond Opening	Туре	Primary	Total	Length	Width	Identification	Amphibole	С	NAM	Sketch/Comments_	Sketch	Photo	EDS
					mg le	rei	ected	lue to o	never	G1.	er longie	KEI		
						[a]	γ.	Pavation	/	eruc)	-	7		
							1 7	/-)				
								1K	2/	1/12				
								11	1	7		,		
								7						
					·					•				
	,			• .										

Reservoirs Environmental, Inc. TEM Asbestos Structure Count

Laboratory name:	REI
Instrument	JEOL 100 CX N (S)
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.01
Scale: 1L =	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filler Area (mm2)	·
QA Type	

Client:	RAR
Sample Tyoe (A=Air, D=Dust):	A
Air volunte (L) or dust area (cm2)	991.8
Date received by lab	7/6/12
Lab Job Number:	239552
Lab Sample Number:	890756
•	

Fraction of primary titler usad	
Total Resuspension Volume (ml)	•
Voluma Applied to sacondary filter (ml)	

Analyzed by	TB
Analysis date	7/6/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	1-6
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Date Analyzed

Grid	Grid Grid Opening		No. of Str	uctures	Dimer	nsions	Identification	Mineral Class	ass			1 = yes, blank = no		
	One opening	Туре	Primary	Total	Length	Width		Amphibole	С	NAM	Sketch/Comments	Sketch	Photo	EDS
A	434	ND			P	م میا	St	Dounty.	-	5-7	La skous			
	63-4	ND			Pr	P	80	% in hul	(-7	la de lons			
	Fay	M				.,								
	E3-4	M						sk	/	/				
B	K5-1	ND						4	7/4/	12				
	H5-1	M							//					
	G15-1	M												
	F5-1	MS												
							ه							

Reservoirs Environmental, Inc. TEM Asbestos Strueture Count

Laboratory name:	REI
Instrument	JEOL 100 CX N (S)
Voltage (KV)	100 KV
Magnification	20KX 10KX
Grid opening area (mm2)	0.01
Scale: 1L=	0.28 um
Scale: 1D =	0.056 um
Primary filter area (mm2)	385
Secondary Filter Area (mm2)	
QA Type	

Client :	RAR
Sample Type (A=Air, D=Dust):	A
Air vokime (L) or dust area (cm2)	995.4
Date received by lab	7/6/12
Lab Job Number:	239552
Lab Sample Number:	890757

F-Factor Calculation (Indirect Preps O	nly):
Fraction of primary filter used	
Total Resuspension Volume (ml)	
Volume Applied to secondary filter (mi)	•

<u> </u>	
Analyzed by	TB
Analysis date	7/6/12
Method (D=Direct, I=Indirect, IA=Indirect, ashed)	75
Counting rules (ISO, AHERA, ASTM)	AH
Grid storage location	Month Analyzed
Scope Alignment	Oate Analyzed

Grid	Grid Opening	Structure	No. of Str	uctures	Dimensions		Dimensions identification Mineral Class		Mineral Class			1 = yes, blank = no		
Gild	Ond Opening	Туре	Primary	Total	Length	Width	Identification	Amphibole	c ·	NAM	Sketch/Comments	Sketch	Photo	EOS
A	K4-4	M												
	Helal	M												
	64-4	M			Va	205 A	715	~80%	inh	nt	5% Jok	vs		
	FU-U	MÔ				1		sk						
B	K3-6	W				i .		45	7/1	6/12				
	H3-6	M												
	44-3	V.D												
	H4-3	11												
		1010			:									
				•										

Analytical Procedures - AHERA

Transmission electron microscopy/energy dispersive X-ray spectrometry/selected area electron diffraction (TEM/EDX/SAED) was employed in the analysis of the samples, which were collected on 25 mm mixed cellulose ester air filters. A portion of each filter was collapsed with acetone and etched in a plasma asher. The etched filter was then coated with a thin layer of carbon in a carbon side down. The sample was then placed inside a condensation washer and treated with acetone to remove the filter matrix and expose any inert material.

For each sample, enough grid openings on a 200 mesh TEM grid are analyzed to ensure an analytical sensitivity of at least 0.005 structures/cc. A minimum of four grid openings from two preparations are analyzed for each sample. The grid openings are searched for fibrous structures which, if present are analyzed by SAED and/or EDX (elemental analysis). The AHERA protocol requires SAED confirmation of enough chrysotile asbestos structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures). Both SAED and EDX confirmation are required of enough amphibole structures on each sample to cause the sample to exceed 70 structures/mm² (usually 4 or 5 structures) per sample. Either SAED or EDX is required for the remaining asbestos structures of either type. The morphology of each structure is determined and the length and the diameter of any asbestos structures are recorded. Asbestos fibers, bundles, cluster and matrices were identified and recorded. The asbestos structures have been defined in AHERA as follows:

Fiber: is a structure having a minimum length greater than or equal to 0.5

micron with an aspect ratio of 5:1 or greater with substantially parallel

sides.

Bundle: is a structure composed of three or more fibers in parallel arrangement,

with each fiber closer than the diameter of one fiber.

Cluster: is a structure with fibers in random arrangements such that all fibers are

intermixed and no single fiber is isolated from the group.

Matrix: is a fiber or fibers with one end free and the other end embedded or

hidden by a particulate. The exposed fiber end must meet the fiber

definition given above.

If more than 50 asbestos structures are identified and confirmed on a sample, AHERA analysis may be terminated after completion of the grid opening, which contains the 50th structure. AHERA protocol requires the laboratory to reject any clearance sample which contains in excess of 25% total particulate loading or which appears to be unevenly loaded.

The AHERA protocol includes specific sampling requirements, including minimum numbers of samples and minimum air volumes. Specifically, the 70 structures/mm² clearance criteria is only allowed for sets five inside samples (collected in a group of 13 samples including: five outsides and three blanks) with volumes greater than 1200 liters (40 CFR Part 763, page 41894). Deviation from the AHERA sampling protocol may affect the validity of the analytical results. Analysis of samples collected by non-protocol methods are not accredited by NVLAP

Equations Used for Calculations

Area Analyzed, mm² = # GO counted x Average GO Area (mm)

Concentration, s/cc = $\frac{\text{\# Asbestos Structures}}{\text{\# GO Counted}}$ x $\frac{1}{\text{Volume (L)}}$ x $\frac{\text{Eff. Filter Area (mm}^2)}{\text{Average GO area (mm}^2)}$ x $\frac{\text{IL}}{\text{1000cc}}$

Filter loading, s/mm² = # Asbestos structures Area Analyzed (mm²)

GO = TEM grid opening